

$\{x \in D_f \mid f(x) \in D_g\} \xrightarrow{\text{نقطة}} D_f \rightarrow \sqrt{\log \frac{x-1}{2}} \rightarrow x-1 > 0 \rightarrow x > 1 \text{ (I)}$
 $\log \frac{x-1}{2} \geq 0 \rightarrow x-1 \geq 2 \rightarrow x \geq 3 \text{ (II)}$
 $I \cap II \rightarrow x \geq 3 = D_{f \circ g}$
 $D_g \rightarrow \sqrt{-(x-2)^2} \rightarrow x=2 \text{ (نقطة الحد)}$
 $\ominus (x-2)^2 \geq 0 \rightarrow x=2$

$\sqrt{\log \frac{x-1}{2}} = 2 \rightarrow \log \frac{x-1}{2} = 4 \rightarrow x-1 = 2^4 \rightarrow x=17$
 $\rightarrow \{17\} \cap [2, +\infty) \rightarrow \{17\} \rightarrow D_{f \circ g}$

$f \circ g(x) \rightarrow f(x^2 - 3x + 1) \rightarrow 2(x^2 - 3x + 1) - 5 \rightarrow 2x^2 - 4x + 1$
 $g \circ f(x) \rightarrow g(2x - 5) \rightarrow (2x - 5)^2 - 2(2x - 5) + 1 \rightarrow 4x^2 - 4x + 1$
 $2x^2 - 4x + 1 = 4x^2 - 4x + 1 \rightarrow 2x^2 - 4x + 3 = 0 \rightarrow x^2 - 2x + \frac{3}{2} = 0$
 $10 \leftarrow S = -\frac{b}{a}$
 $11 \leftarrow P = \frac{c}{a}$
 $100 - \frac{2(11 \times 10)}{2} = 40 \rightarrow \text{جواب}$

$g \circ f(x) = 2x^2 + 1 \rightarrow g(2x) = 2x^2 + 1 \rightarrow 2x = t \rightarrow x = \frac{t}{2} \rightarrow g(t) = 2\left(\frac{t}{2}\right)^2 + 1$
 $\rightarrow g(t) = \frac{\omega}{f} t^2 + 1 \xrightarrow{(t-v)} g(t-v) = \frac{\omega}{f} (t-v)^2 + 1 \rightarrow \frac{\omega}{f} t^2 - \frac{2\omega}{f} t + \frac{\omega}{f} v^2 + 1$
 $g_s \xrightarrow{x=V} \frac{\omega}{f} (t^2 - 2Vt + V^2) + 1 = \frac{\omega}{f} t^2 - \frac{2\omega V}{f} t + \frac{\omega V^2}{f} + 1$
 $\text{جواب: } \checkmark$

$f \circ g \rightarrow 2x^2 - 4x - 1 \rightarrow 3g(x) - 4 = 2x^2 - 4x - 1 \rightarrow 3g(x) = 2x^2 - 4x + 3 \rightarrow g(x) = \frac{2x^2 - 4x + 3}{3}$
 $g \circ f(x) \rightarrow g(2x - 4) \xrightarrow{I} \frac{(2x-4)^2 - 2(2x-4) + 1}{3} = \frac{4x^2 - 4x + 1}{3}$

$f - g(x) \rightarrow \frac{2x^2 - 4x - 1}{3} - \frac{4x^2 - 4x + 1}{3} \rightarrow -\frac{2x^2}{3} \rightarrow -1 \rightarrow -x + 5$
 $2g(x) = 3f(x) + 1 \rightarrow -f(x) + 1 = 2f(x) - 2g(x) \rightarrow -f(x) + 1 = -2x + 10 \rightarrow 2x + 1 = f(x)$
 $2x + 1 - g(x) = -x + 5 \rightarrow -g(x) = -3x + 4 \rightarrow g(x) = 3x - 4$
 $f \circ g(x) \rightarrow 2(3x - 4) + 1 \rightarrow 6x - 7 \rightarrow \frac{6x - 7}{3} = 4 \rightarrow 6x = 19 \rightarrow x = \frac{19}{6}$
 $a = \frac{1}{\frac{1}{a}} \rightarrow a = 1$

с)

⑤

①

30

⑨

۱۰

10

Scanned with CamScanner